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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/506,703

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Michael S. Kopreski

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01/30/2009

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EXAMINER

NATARAJAN, MEERA

ART UNIT

PAPER NUMBER

1643

MAIL DATE

DELIVERY MODE

01/30/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/506,703

Applicant(s)

KOPRESKI, MICHAEL S.

Examiner

MEERA NATARAJAN

Art Unit

1643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24, 26 and 28-36 is/are pending in the application.
- 4a) Of the above claim(s) 1-9, 16, 17, 21, 22, 24, 26, 28-36 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-15, 18-20, and 23 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/19/2008 has been entered.
2. Accordingly, Claims 1-24, 26, 28-36 are pending. Claims 1-9, 16, 17, 21, 22, 24, 26, 28-36 are withdrawn as being drawn to non-elected inventions.
3. Claims 10-15, 18-20, and 23 will be examined on the merits.

New Grounds of Rejection

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 10-15, 18, 19, and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Kopreski et al. (Clinical Cancer Research, Vol. 5, 1961-1965, August 1999).

6. The Claims are drawn to method of detecting extracellular RNA from an apoptotic body in serum from a patient, the method comprising extracting, separating, isolating or purifying the apoptotic body from serum, labeling RNA in the apoptotic body or cDNA derived therefrom or its amplified product using a labeled primer or probe specific to RNA or cDNA derived therefrom and detecting the labeled RNA or cDNA from the apoptotic bodies using fluorescent labeled probes and flow cytometry.

7. Kopreski et al. teach detecting extracellular RNA in the serum of patients with malignant melanoma and in serum samples from normal volunteers as controls. Kopreski et al. disclose detection of tyrosine mRNA in the samples from patients with malignant melanoma. Kopreski et al. disclose in the "Materials and Methods" the serum was prepared by centrifugation at 830 X *g* for 10 min. Although Kopreski et al. do not specifically disclose the RNA detected is from apoptotic bodies, the instant specification defines apoptotic bodies "are separated from the cellular fraction of a bodily fluid by centrifugation, wherein the non-cellular centrifuged fraction contains the apoptotic body" (see p. 8, lines 15-17 of the instant specification). Therefore, Kopreski et al. inherently detects RNA from apoptotic bodies by performing the same method for isolating apoptotic bodies as disclosed in the instant specification. Kopreski et al. also disclose in the "Materials and Methods", amplification and detection of the RNA using specific primers and probes and detection methods such as gel electrophoresis and southern blot.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kopreski et al. (Clinical Cancer Research, Vol. 5, 1961-1965, August 1999) in view of Mok et al. (J. Natl. Cancer Inst. Vol. 93(9), pp.1458-1464 Oct. 2001).

11. The Claims are drawn to the method of Claim 10 wherein the RNA is extracted from the apoptotic body and hybridized to a solid substrate such as a bioelectric interface.

12. The teachings of Kopreski et al. are presented in the 102(b) rejection set forth above. Kopreski et al. does not teach hybridizing the extracted RNA to a bioelectric interface. This deficiency is made up for in Mok et al.

13. Mok et al. teach identification of potential serum markers in ovarian cancer using microarray technology. RNA was isolated and pooled from three ovarian cancer cell lines and from three normal human ovarian surface epithelial cells lines.

Complementary DNA generated from these pools was hybridized to a microarray slide and genes overexpressed in the cancer cells were identified (see Abstract).

14. It would have been *prima facie* obvious to one of ordinary skill in the art at the time the claimed invention was made to use the technique taught by Mok et al. to identify RNA of apoptotic bodies in serum/plasma samples. One of ordinary skill in the art would have been motivated to do so with a reasonable expectation of success by the teachings of Kopreski et al. and Mok et al. because the microarray technology would allow a potential screening method to detect increased levels of RNA from apoptotic bodies in plasma samples with a high throughput.

All other rejections of record are withdrawn in view of Applicants amendments to the claims in the reply filed on 11/19/2008.

Conclusion

15. Claims 10-15, 18-20, and 23 are rejected.

16. No Claim is allowed.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MEERA NATARAJAN whose telephone number is

(571)270-3058. The examiner can normally be reached on Monday-Thursday, 9:30AM-7:00PM, ALT. Friday. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Helms can be reached on 571-272-0832. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MN

/Larry R. Helms/
Supervisory Patent Examiner, Art Unit 1643